

REMARKS

The present application relates to hybrid maize plant and seed 33T17. Claims 1-32 are currently pending in the present application. Applicant respectfully requests consideration of the following remarks.

Detailed Action

A. Request for Continued Examination

The Examiner acknowledges Applicant's Request for Continued Examination under 37 C.F.R. § 1.114 based upon parent Application No. 09/489,884 as acceptable.

B. Status of the Application

Applicant acknowledges the objection to claims 1 and 5 is withdrawn in view of Applicant's amendments to said claims to include the ATCC Accession Number.

Applicant further acknowledge the rejection of claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Cunnyngnam (US Patent 6,087,564) is withdrawn in view of Applicant's arguments on page 4 of the Remarks.

C. Claim Objections

The Examiner objects to claims 6, 12, and 16 for the use of "A". Applicant has now amended claims 6, 12, and 16 to include --The-- as suggested by the Examiner, thereby alleviating this objection.

The Examiner also objects to claims 12 and 16 for the phrase "A hybrid maize plant". Applicant has now amended these claims to read --The hybrid maize plant-- as suggested by the Examiner, thereby alleviating this objection.

D. Claims

Applicant acknowledges the addition of new claims 33 through 42. The new claims do not add new matter as there is literal support for the claims in the originally filed specification (pages 27-38, specification).

Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 5-11, 13-19, 22-24, and 26-32 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claim 5 stands rejected for the phrase "tissue regenerates" lacking proper antecedent basis in the claim. Applicant has now amended claim 5 to cancel the phrase "tissue regenerates", thereby alleviating this rejection.

Claims 5 and 7 stand rejected for the phrase "capable of expressing...characteristics". Applicant respectfully traverses this rejection. The term is not indefinite and would be understood by one skilled in the art to mean the ability to manifest the morphological and physiological characteristics. In addition, Applicant asserts that plants regenerated from cells of the tissue culture may be stunted and have other changes in growth habit, but once the Hybrid 33T17 regenerated plant is self-pollinated and the seed is grown under normal growing conditions, the plant will again express the same traits as Hybrid 33T17. Further, Applicant has now deleted the term in claim 5, thereby alleviating the rejection. Applicant asserts claims 5 and 7 are now in condition for allowance.

Claim 6 stands rejected for the phrase "the cells or protoplasts being from a tissue" as it is indefinite because it is unclear what the metes and bounds of "being from" are. Applicant has now amended claim 6 to read --the cells or protoplasts of said cells having been isolated from a tissue--, as suggested by the Examiner thereby, alleviating this rejection.

Claim 7 stands rejected as indefinite because at line 1, the maize plant or its parts cannot be regenerated from the tissue culture of claim 5, said maize plant must be regenerated from the cells of the tissue culture of claim 5. Applicant has now amended claim 7 to read "the cells of the tissue culture", as suggested by the Examiner, thereby alleviating this rejection.

Claim 8 and 21 stands rejected as indefinite because the plant of claim 2 is not male sterile. Applicant has now amended the claims to read --further comprises a genetic factor conferring male sterility--, thereby obviating this rejection.

Claims 9, 13, 17, 22, 26 and 30 stand rejected as indefinite because the claims do not set forth "other" positive method steps leading to the development of a maize plant in the claims. Applicant respectfully submits the claims are directed to a method for producing a maize plant

wherein the maize plant of claim 2, or its parts, is used as a source of plant breeding material. This method clearly defines a method utilizing the proprietary hybrid 33T17 to produce a maize plant. The techniques described in the present application in the "Background of the Invention" (pages 1-7) and "Further Embodiments of the Invention" (pages 27-39) sections clearly define and distinctly claim positive method steps for producing maize plants for small or large scale production. Applicant respectfully requests the Examiner to withdraw this rejection.

Claims 11, 15, 19, 24, 28 and 32 are indefinite in their recitation of "yield ability", "food grade quality", "test weight" and "suited to the Southcentral region of the United States", as the Examiner states these terms are relative and do not state the metes and bounds of the claimed invention.

Applicant respectfully traverses this rejection. Each of these claims recites two requirements, first that 33T17 be an ancestor of the plant and second, that the claimed plant be "capable of expressing a combination of at least two 33T17 traits" selected from a Markush grouping. Applicant notes that the Markush listing is directed to "33T17" traits. Thus, Applicant submits that the recitation of 33T17 traits clearly delineates the traits listed as those which are from 33T17 or ancestors thereof. The recitation of "33T17" in front of the term traits clearly indicates that the traits must be originating from 33T17. This is particularly so since the claim also requires that the plant 33T17 must be an ancestor of the claimed plant. Applicant further submits that the adjectives used within the claims are not unduly narrative or imprecise as they do clearly characterize and positively recite the degree of expression of the particular traits within the application in Tables 1-4 (pages 16-26). This terminology is well known in the art and commonly used within breeding techniques of hybrid plants. In addition, Applicant has amended claims 11, 15, 19, 24, 28 and 32 by adding the threshold, having 50% of the alleles, as well as an assayable function, capable of expressing at least a combination of two traits of 33T17. There is literal support for the amended claims found in the specification on page 3 and beginning on page 27 of the instant specification. Further, Applicant has now deleted the areas of adaptability therefore alleviating the rejection to the term "suited to the Southcentral region of the United States". Applicant therefore respectfully submits that this language is not indefinite and would be understood by one in the art and is the terminology of use within the art. Therefore, Applicant respectfully requests reconsideration.

Furthermore, in Georgia-Pacific, the Federal Circuit stated that "...the policy of the patent statute contemplates granting protection to valid inventions, and this policy will be defeated if protection were to be accorded to those patents which were capable of precise definition." Georgia-Pacific Corp. v. U.S. Plywood Corp., 258 F.2d 124, 136, 118 U.S.P.Q. 122 (2nd Cir.). While some decisions have advocated the general statement that "[a]n invention must be capable of accurate definition, and it must be accurately defined, to be patentable, (See United Carbon Co. v. Binney & Smith Co., 1942, 317 U.S. 228, 237, 63 S.Ct. 165, 170, 87 L.Ed. 232), the Federal Court has stated that "such general statements, however, must be viewed in the context of circumstances. Objectionable indefiniteness must be determined by the facts in each case, not by reference to an abstract rule." Georgia-Pacific at 136. "Patentable inventions cannot always be described in terms of exact measurements, symbols and formulae, and Applicant necessarily must use the meager tools provided by language, tools which admittedly lack exactitude and precision. If the claims read in light of the specification, reasonably apprise those skills in the art both in utilization and scope of the invention, and if the language is as precise as the subject matter permits, the courts can demand no more." *Id.* (See North American Vaccine Inc. v. American Cyanamide Co., 7 F.3d 1571, 28 U.S.P.Q.2d 1333, 1339 (Fed. Cir. 1993)). Moreover, it is against the policy of the patent statute to bar patent protection for inventions that are incapable of precise definition. Georgia-Pacific at 136. With respect to the above-mentioned terms, the claims are as precise as the subject matter of the invention permits. Therefore, Applicant respectfully requests reconsideration of the claims.

Claims 16 and 29 stand indefinite because it is unclear how one skilled in the art could produce the maize plant of claim 2 or 20 containing one or more genes transferred by backcrossing.

Applicant respectfully traverses this rejection. Applicant asserts the specification supplies an extensive definition and description of 'transgene' and transgenes of interest. (See generally pages 32-36 for an extensive list of potential transgenes.) Applicant directs the Examiner's attention to the argument *infra*, under § 112, first paragraph. Applicant also notes, a person having skill in the art could insert a DNA gene into a selected maize plant. Applicant has defined transgenes in the present application in the paragraph that spans pages 26-27. In addition, Applicant has amended claims 11, 15, 19, 24, 28 and 32 by adding the threshold,

having 50% of the alleles, as well as an assayable function, capable of expressing at least a combination of two traits of 33T17. There is literal support for the amended claims found in the specification on page 3 and beginning on page 27 of the instant specification. Applicant has also amended claims 16 and 29 to read "further comprises" instead of "contains". Applicant therefore respectfully submits that this language is not indefinite and would be understood by one in the art and is the terminology of use within the art. Therefore, Applicant respectfully requests reconsideration.

In light of the above remarks, Applicant submits that claims 5-11, 13-19, 22-24 and 26-32 clearly define and distinctly claim the subject matter Applicant regards as the invention. Applicant respectfully requests reconsideration and withdrawal of the rejections under 35 U.S.C. § 112, second paragraph.

Rejections Under 35 U.S.C. § 112, First Paragraph

Claims 9-19 and 22-32 were rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The Examiner asserts the claims are broadly drawn to corn progeny plants and transgenic corn plants having undisclosed identifying characteristics whereby only the characteristics of the deposited corn line "33T17" are known. There are insufficient relevant identifying characteristics to allow one skilled in the art to predictably determine the genomic structure or phenotypic characteristics of the plant obtained at each level of crossing or of each generation. In addition, at claims 12-15 and 25-28 the effect of transgenes on the physiological and morphological characteristic of a transgenic "33T17" corn plant or progeny thereof, is not sufficiently described whereby one of skill in the art could recognize the claimed corn plant. The Examiner states that over an undetermined number of generations, the identifying characteristics of each generation become highly unpredictable, especially in view of the fact that none of the identifying characteristics of the progeny plants are disclosed in the specification. The Examiner further states that while claims 11, 15, 19, 24, 28 and 32 set forth at least two "33T17" traits, because the terms used to describe the traits are relative terms, lacking definitive comparative

basis, these traits do not adequately define or distinguish "33T17" progeny plants. Therefore the Examiner states there is a lack of adequate description of the claimed progeny plants, in view of the of the level of knowledge and skill in the art, one skilled in the art would not recognize from the disclosure that Applicant was in possession of the claimed invention at the time of filing.

Applicant respectfully traverses this rejection. Applicant respectfully submits that a deposit, as discussed in the Preliminary Amendment of July 2, 2002, has been made. Applicant submits that at least 2,500 seeds of Variety 33T17 have been deposited with the ATCC on May 3, 2002. Further, Applicant asserts the written description requirement set forth in 35 U.S.C. § 112 is met, particularly in light of the fact that, as stated above, Applicant has reduced the invention to practice and deposited the derived biological materials in a public depository, thereby demonstrating its "possession" of the invention. Enzo Biochem Inc., v. Gen-Probe, Inc., 63 U.S.P.Q.2d (BNA) 1609, 1613 (Fed. Cir. 2002) ("In light of the history of biological deposits for patent purposes, the goals of the patent law, and the practical difficulties of describing unique biological materials in a written description, we hold that reference in the specification to a deposit in a public depository, which makes its contents accessible to the public when it is not otherwise available in written form, constitutes an adequate description of the deposited material sufficient to comply with the written description requirement of § 112, 1."); see also MPEP § 2163.02 (8th ed. Aug. 2001) ("Under Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1563-64, 19 U.S.P.Q.2d 1111, 1117 (Fed. Cir. 1991), to satisfy the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention, and that the invention, in that context, is whatever is now claimed.") In view of these deposits and the addition of new claims 33-42, the rejections under 35 U.S.C. § 112, first paragraph should be removed (MPEP § 2411.02). Such action is respectfully requested.

The Examiner further states the specification does not describe the plants developed by the maize breeding programs, transgenic 33T17 plants, 33T17 plants further comprising genes transferred by backcrossing, or maize plants wherein at least one ancestor is corn variety 33T17 and which expresses at least two of the traits listed in claims 11, 15, 19, 24, 28 or 32. Given the breadth of the claims encompassing the corn plant 33T17 the Examiner states the specification

fails to provide an adequate written description of the progeny plants encompassed by the claims.

Applicant respectfully traverses this rejection. Applicant has amended claims 11, 15, 19, 24, 28 and 32 by adding the threshold, having 50% of the alleles, as well as an assayable function, capable of expressing at least a combination of two traits of 33T17. There is literal support for the amended claims found in the specification on page 3 and beginning on page 27 of the instant specification. Further, Applicant has now deleted the areas of adaptability therefore alleviating the rejection to the recitation of regions. Plant breeding techniques known in the art and used in the maize plant breeding program include, but are not limited to the following: recurrent selection backcrossing, pedigree breeding, restriction length polymorphism enhanced selection, genetic marker enhanced selection and transformation. With the amendments to the above-stated claims, Applicant has identified a transgenic 33T17 plant (claim 12), a 33T17 plant further comprising genes transferred by backcrossing (claim 14), or a maize plant wherein at least one ancestor is maize variety 33T17 (claim 15) by defining a particular threshold that limits variation and reciting a functional test to identify such plants. In addition, Applicant has drafted new claims 33-42 which Applicant believes come within the purview of the written description requirement and do not add new matter. Under the written description requirement, Applicant should be allowed to claim the progeny of a cross of maize plants crossed with 33T17 with phenotypic characteristics since distinguishing identifying characteristics in the chemical and biotechnological arts, dealing with DNA, are those such as: partial structure, physical and/or chemical properties, functional characteristics, known or disclosed correlation between structure and function, method of making, and combinations of the above. In plants, these identifying characteristics are those detectable in the phenotype which are manifested through gene expression. Claims to a particular species of invention are adequately described if the disclosure of relevant identifying characteristics are present in the application. Again, one of ordinary skill in the art is reasonably apprised in knowing that a plant crossed with 33T17 will result in a plant having half of the genetic contribution of 33T17. A further limitation set by Applicant is that the plants must be capable of expressing a combination of at least two phenotypic characteristics of 33T17.

Further, Applicant asserts the specification supplies an extensive definition and description of 'transgene' and transgenes of interest. (See generally pages 33-36 for an extensive list of potential transgenes.) Applicant also notes, a person having skill in the art could insert a DNA gene into a selected maize plant. Applicant has defined transgenes in the present application in the paragraph that spans pages 27-28 as follows:

With the advent of molecular biological techniques that have allowed the isolation and characterization of genes that encode specific protein products, scientists in the field of plant biology developed a strong interest in *engineering the genome of plants to contain and express foreign genes, or additional genes* (perhaps driven by different promoters) in order to alter the traits of a plant in a specific manner. *Such foreign, additional and/or modified genes are referred to herein collectively as "transgenes".* Over the last fifteen to twenty years several methods for producing transgenic plants have been developed, and *the present invention, in particular embodiments, also relates to transgenic versions of the claimed hybrid 33T17.*

(emphasis added) The present application clearly describes and defines a transgene to be a gene transferred into a plant wherein the product of that gene is expressed. This expression will confer a new or improved trait into that plant. However, this gene is but a tiny fraction of the entire genome. In other words, the plant of claim 12 is distinguishable from the prior art plants just as is hybrid 33T17 without the transgenes. Further, the plant of claim 12 also contains a trait(s) that is either improved or additional to the traits of the maize plant of claim 2. The 33T17-transgene plant still expresses the unique combination of traits of 33T17 without the transgenes with the exception of the traits expressed by the transgenes. The trivial modifications introduced by the transgenes to the unique invention of 33T17 are clearly supported and described in the present application.

Finally, Applicant respectfully submits that "[t]he test for definiteness is whether one skilled in the art would understand the bounds of the claim when read in light of the specification. . . . If the claims read in light of the specification reasonably apprise those skilled in the art of the scope of the invention, § 112 demands no more. . . . The degree of precision necessary for adequate claims is a function of the nature of the subject matter." Miles Laboratories, Inc. v. Shandon Inc., 997 F.2d 870 (Fed. Cir. 1993).

In light of the above remarks, Applicant respectfully requests reconsideration and withdrawal of the rejections to claims 9-19 and 22-32 under 35 U.S.C. § 112, first paragraph.

Issues Under 35 U.S.C. § 102/103

Claims 11-19 and 24-32 stand rejected under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Cunnyingham (U.S. Patent 6,087,564). The Examiner asserts this rejection is repeated for the reason of record as set forth in the last office action mailed April 5, 2002. The Examiner states that Applicant's arguments were fully considered but not persuasive. Cunnyingham discloses "a hybrid maize plant designated 34P93". The Examiner further states that 34P93 hybrid maize plant inherently discloses such relative traits as "white kernel and cob color", "dark green leaves" and "light green silk color". The Examiner concludes stating that the claimed invention is *prima facie* obvious as a whole to one of ordinary skill in the art at the time it was made, if not anticipated by Cunnyingham.

Applicant respectfully traverses this rejection and request reconsideration of claims 11-19 and 24-32. The Applicant would like to point out that the inventions 33T17 and 34P93 are not the same inventions. Nor are their differences minor morphological variations. Applicant submits that the claimed plant cannot be rendered obvious as it possesses a unique combination of traits which confers a unique combination of genetics. Moreover, Applicant claims a method of making a particular plant which did not previously exist. Pursuant to the recent Federal Circuit decision, Elan Pharmaceuticals, Inc. v. Mayo Foundation for Medical Education & Research, 304 F.3d 1221, (Fed. Cir. 2002), "a novel patented product is not "anticipated" if it did not previously exist." *Id.* This is the case whether or not the process for making the new product is generally known. *Id.* The invention 33T17 has not previously existed as it is the result of the crossing the two maize inbred lines GE515488 and GE534625.

Furthermore, when looking at the tables of both inventions, hybrids created using 33T17 as one of the parents are clearly not anticipated by hybrids made using 34P93 as one of the parents. The inventions 33T17 and 34P93 differ for various traits that are not minor. For example, 33T17 has an ear height as reported in Table 1, of 110.0 cm (page 16). As reported in Table 1 of 6,087,564 Patent, 34P93 demonstrates an ear height of 137.5 cm. Another example, as reported in Table 1, 33T17 has an anther color of light green (page 16). As reported in Table 1 of the 6,087,564 Patent, 34P93 demonstrates an anther color of pink. A third example of the differences is that 33T17 exhibits an above average resistance to Corn Lethal Necrosis as

compared to 34P93. As reported in Table 1, 33T17 has a resistance of 6. As reported in Table 1, 34P93 has a susceptibility of 4.

Other traits which differ between the two inventions include: fresh husk color (33T17 light green, 34P93 medium green), resistance to Common Rust (33T17 average resistance of 5, 34P93 no teaching) and above average resistance to European Corn Borer, 1st generation (33T17 above average resistance of 7, 34P93 no teaching).

The aforementioned examples all illustrate that there are large differences between 33T17 and 34P93. The examples listed are not exhaustive but they do give ample evidence that the inventions are not the same. Furthermore, when looking at the tables of both inventions, hybrids created using 33T17 as one of the parents are clearly not anticipated by hybrids made using 34P93 as one of the parents.

Applicant further submits that the claims do not simply recite traits, but instead recites these specific traits only to the extent that they are "33T17" traits; thereby being derived from the seed/germplasm of 33T17. Note, variety with respect to agricultural variety, can be defined as a group of similar plants that by structural features and performance can be identified from other varieties within the same species. When looking at maize plants it would be possible for one ordinarily skilled in the art to find many traits that are similar between varieties such as the disease resistance or growth habit. Nonetheless, the claim also recites that the claimed plant must have 33T17 as an ancestor further indicating that these traits must originate from the 33T17 plant not 34P93. In response to the Examiner's contention that one could not distinguish the claimed plant from the prior art which shows each of these traits, Applicant submits that one can easily tell by reference to the plants breeding history, which can be confirmed by its molecular profile whether the plant did indeed have plant 33T17 as an ancestor and expressed two or more "33T17" traits. Further, any phenotypic trait that is expressed is a result of a combination of all of the genetic material present in the plant, and 33T17 will have its own unique genetic background that will give rise to the claimed plant and this profile along with its combination with other plants will result in a unique combined genetic profile that is the product claimed.

Furthermore, there is no expectation of success that the crossing of the Hybrid 34P93 with some yet to be identified plant would yield a plant with two of the traits enumerated in the claimed invention and at least 50% of its alleles from 33T17 because that particular plant did not

begin with the claimed seed 33T17 which is essential. Applicant asserts that it is not the phenotypic characteristics alone that are claimed and taught in the instant invention. It is a combination of the physiological and morphological characteristics, as claimed, which make the present Hybrid non-obvious and not anticipated over Cunnyingham. Further, In re Thorpe, states that "a product by process claim may be properly rejected over prior art teaching the same product produced by a different process", as noted by the Examiner. In re Thorpe, 227 U.S.P.Q. 964, 966 (Fed. Cir. 1985). However, Applicant submits that this is not the same product physiologically or morphologically as the cited prior art as can be evidenced by one skilled in the art through analysis of the data tables in each. In addition, it is impermissible to use hindsight reconstruction and the benefit of Applicant's disclosure to pick among pieces which are present in the art, there must be some suggestion to make the combination and an expectation of success. In re Vaeck, 20 U.S.P.Q.2d 1434 (Fed. Cir. 1991). Further, any phenotypic trait that is expressed is the result of the genetic material present in the plant, and 33T17 will have its own unique genetic background that will give rise to the claimed plant and this profile along with its combination with other plants will result in a unique combined genetic profile that is the product claimed. Thus, the present application deserves to be considered new and non-obvious compositions in their own right as products of crossing when 33T17 is used as a starting material.

In light of the above, Applicant respectfully requests the Examiner reconsider and withdraw the rejection to claims 11-19 and 24-32 under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Cunnyingham (U.S. Patent 6,087,564).

Issues Under 35 U.S.C. § 103

Claims 11-19 and 24-32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cunnyingham (U.S. Patent 6,087,564). The Examiner states the "claims are drawn to a hybrid maize plant that would have been *prima facie* obvious to one of ordinary skill in the art".

Applicant respectfully traverse this rejection. When looking at a maize plant it would be possible to find many traits that are similar between varieties such as the color of flowers or growth habit. However, to say there are similarities in phenotype between two varieties is not

the same as saying that the two varieties have the same morphological and physiological characteristics as a whole, or that one is an obvious variant of the other. Further, similarity in phenotype does not mean that the two varieties will perform similarly, particularly in a breeding program. As stated above, variety with respect to agricultural variety may be defined as a group of similar plants that by structural features and performance can be identified from other varieties within the same species.

Applicant submits that Hybrid 34P93 does not exhibit the same characteristics as 33T17. Applicant will illustrate how 33T17 and 34P93 are different. It must be recognized that the hybrids provided by this invention are themselves unusual and unobvious results of a common process, in that they provide the unique combination of "white kernel and cob color", "dark green leaves" and "light green silk color" (see pages 16-27, specification). Nonetheless, Hybrid 33T17 deserves to be considered as a new and non-obvious composition in its own right as does its tissue culture as products of the process when 33T17 is used as starting material. Applicant points out that 33T17 is a unique plant hybrid which never before existed until Applicant filed the application and until its deposit of the same. While Cunningham does teach the general regeneration of maize plants from tissue culture techniques, it does not teach or suggest the use of the unique maize hybrid 33T17. As will be demonstrated below, several morphological and physiological characteristics of Hybrid 33T17 are either different from or not present in 34P93.

For example, Hybrid 33T17 has above average resistance to Northern Leaf Blight while 34P93 is susceptible to the disease. The varieties are also different with respect to ear height, Staygreen, anther color and disease resistance. Differences between the two varieties are summarized in the table below:

<u>CHARACTERISTICS</u>	<u>33T17</u>	<u>34P93</u>
Ear Height (cm)	110.0	137.5
Staygreen	5	4
Anther color	Light green	Pink
Disease Resistance	Above Average Resistance to European Corn Borer, 1 st generation (7) and Resistance to Fusarium Ear and Kernel Rot (5)	No teaching for European Corn Borer, 1 st generation and Fusarium Ear and Kernel Rot

This comparison clearly shows that 34P93 does not exhibit the characteristics of hybrid 33T17. Further, the present application clearly shows in Table 1 at pages 16-18 and Tables 2-4 at pages 20-26 that hybrid 33T17 exhibits light green fresh husk cover, above average resistance to Corn Lethal Necrosis, resistance to Common Rust and the aforementioned characteristics.

In light of the above, Applicant respectfully requests the Examiner reconsider and withdraw the rejection to claims 1-32 under 35 U.S.C. § 103(a).

Applicant acknowledges that claims 1-4 and 20 are allowed. Applicant further acknowledges that claims 1-10, 12-14, 16-18, 20-23, 25-27 and 29-31 are free of the prior art because the claims neither suggest nor teach the 33T17 hybrid maize plant or a maize plant having all of the morphological and physiological characteristics of the 33T17 hybrid maize plant of the instant claims or methods of use. This clearly indicates that the hybrid 33T17 as a whole is considered distinguishable from the prior art for the purposes of novelty and non-obviousness. In any event, the deposit of the representative seed of Hybrid 33T17, as completed on May 3, 2002, should satisfy the description requirement. In light of the above, Applicant respectfully submits the above rejections are clearly improper and request reconsideration and withdrawal of the rejections.

Conclusion

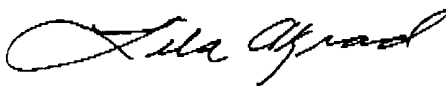
In conclusion, Applicant submits in light of the above amendments and remarks, the claims as amended are in a condition for allowance, and reconsideration is respectfully requested.

No additional fees or extensions of time are believed to be due in connection with this amendment; however, consider this a request for any extension inadvertently omitted, and charge any additional fees to Deposit Account No. 26-0084.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

Reconsideration and allowance is respectfully requested.

Respectfully submitted,



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- pw/LA -

Application No. 09/489,884

**AMENDMENT — VERSION WITH MARKINGS
TO SHOW CHANGES MADE**

In the Specification

Please replace the paragraph beginning at page 27, line 35 with the following:

With the advent of molecular biological techniques that have allowed the isolation and characterization of genes that encode specific protein products, scientists in the field of plant biology developed a strong interest in engineering the genome of plants to contain and express foreign genes, or additional, or [modified] modified versions of native or endogenous genes (perhaps driven by different promoters) in order to alter the traits of a plant in a specific manner. Such foreign, additional and/or modified genes are referred to herein collectively as "transgenes". Over the last fifteen to twenty years several methods for producing transgenic plants have been developed, and the present invention, in particular embodiments, also relates to transgenic versions of the claimed hybrid maize line 33T17.

Please replace the paragraph beginning at page 40, line 2 with the following:

Applicant has made a deposit of at least 2500 seeds of Hybrid Maize Line 33T17[, GE515488, and GE534625] with the American Type Culture Collection (ATCC), Manassas, Va. 20110 USA, ATCC Deposit No. PTA-4274[, 1304, 4289 respectively]. The seeds deposited with the ATCC on May 3, 2002 [(33T17) February 4, 2000 GE515488 and May 6, 2002 (GE524635)] were taken from the deposit maintained by Pioneer Hi-Bred International, Inc., 800 Capital Square, 400 Locust Street, Des Moines, Iowa 50309-2340, since prior to the filing date of this application. Access to this deposit will be available during the pendency of the application to the Commissioner of Patents and Trademarks and person determined by the Commissioner to be entitled thereto upon request. Upon allowance of any claims in the application, the Applicant(s) will make the deposit available to the public pursuant to § 1.808 [without restriction a deposit of at least 2500 seeds of 33T17, GE515488, and GE534625 with the American Type Culture Collection (ATCC), 10801 University Boulevard, Manassas, VA

20110-2209. The seeds deposited with the ATCC will be taken from the same deposit maintained at Pioneer Hi-Bred and described above]. Additionally, Applicant(s) will meet all the requirements of 37 C.F.R. §§ 1.801 - 1.809, including providing an indication of the viability of the sample when the deposit is made. This deposit of Hybrid Maize Line [Maize plant] 33T17 [and GE515488 and GE534625] will be maintained [without restriction] in the ATCC Depository, which is a public depository, for a period of 30 years, or 5 years after the most recent request, or for the enforceable life of the patent, whichever is longer, and will be replaced if it ever becomes nonviable during that period. [Applicant will impose no restrictions on the availability of the deposited material from the ATCC; however] Applicant has no authority to waive any restrictions imposed by law on the transfer of biological material or its transportation in commerce. Applicant does not waive any infringement of its rights granted under this patent or under the Plant Variety Protection Act (7 USC 2321 et seq.) which may protect Hybrid Maize Line 33T17.

In the Claims

Please amend claims 5-8, 11, 12, 15, 16, 19, 21, 24, 28, 29 and 32 as follows:

5. (Twice Amended)

A tissue culture of regenerable cells of a hybrid maize plant 33T17, representative seed of said hybrid maize plant 33T17 having been deposited under ATCC accession number PTA-4274 [____], wherein the tissue regenerates plants capable of expressing all the morphological and physiological characteristics of said hybrid maize plant 33T17].

6. (Twice Amended)

[A] The tissue culture according to claim 5, [the] cells or protoplasts of said cells having been isolated from a tissue [of the tissue culture being from a tissue] selected from the group consisting of leaves, pollen, embryos, roots, root tips, anthers, silks, flowers, kernels, ears, cobs, husks, and stalks.

7. (Thrice Amended)

A maize plant, or its parts, regenerated from the cells of the tissue culture of claim 5 and capable of expressing all the morphological and physiological characteristics of hybrid maize plant 33T17, representative seed having been deposited under ATCC accession number PTA-4274.

8. (Amended)

The maize plant of claim 2 wherein said plant [is male sterile] further comprises a genetic factor conferring male sterility.

11. (Twice Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 2, wherein said maize plant has derived at least 50% of its alleles from 33T17 and is capable of expressing a combination of at least two 33T17 traits [which are not significantly different from 33T17 when determined at a 5% significance level and when grown in the same environmental conditions, said traits] selected from the group consisting of: a relative maturity of approximately 113 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, yielding ability, food grade quality, white food grade, test weight, Gray Leaf Spot tolerance, and tolerance to Fusarium Ear Rot[, and suited to the Southcentral region of the United States].

12. (Amended)

[A] The hybrid maize plant according to claim 2, wherein the genetic material of said plant contains one or more transgenes.

15. (Twice Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 12, wherein said maize plant has derived at least 50% of its alleles from 33T17 and is capable of expressing a combination of at least two 33T17 traits [which are not significantly different from 33T17 when determined at a 5% significance level and when

grown in the same environmental conditions, said traits] selected from the group consisting of: a relative maturity of approximately 113 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, yielding ability, food grade quality, white food grade, test weight, Gray Leaf Spot tolerance, and tolerance to Fusarium Ear Rot[, and suited to the Southcentral region of the United States].

16. (Amended)

[A] The hybrid maize plant according to claim 2, wherein the genetic material of said plant [contains] further comprises one or more genes transferred by backcrossing.

19. (Twice Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 16, wherein said maize plant has derived at least 50% of its alleles from 33T17 and is capable of expressing a combination of at least two 33T17 traits [which are not significantly different from 33T17 when determined at a 5% significance level and when grown in the same environmental conditions, said traits] selected from the group consisting of: a relative maturity of approximately 113 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, yielding ability, food grade quality, white food grade, test weight, Gray Leaf Spot tolerance, and tolerance to Fusarium Ear Rot[, and suited to the Southcentral region of the United States].

21. (Amended)

The maize plant of claim 20 wherein said maize plant [is male sterile] further comprises a genetic factor conferring male sterility.

24. (Twice Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 20, wherein said maize plant has derived at least 50% of its alleles from 33T17 and is capable of expressing a combination of at least two 33T17 traits [which are not significantly different from 33T17 when determined at a 5% significance level and when

grown in the same environmental conditions, said traits] selected from the group consisting of: a relative maturity of approximately 113 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, yielding ability, food grade quality, white food grade, test weight, Gray Leaf Spot tolerance, and tolerance to Fusarium Ear Rot[, and suited to the Southcentral region of the United States].

28. (Twice Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 25, wherein said maize plant has derived at least 50% of its alleles from 33T17 and is capable of expressing a combination of at least two 33T17 traits [which are not significantly different from 33T17 when determined at a 5% significance level and when grown in the same environmental conditions, said traits] selected from the group consisting of: a relative maturity of approximately 113 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, yielding ability, food grade quality, white food grade, test weight, Gray Leaf Spot tolerance, and tolerance to Fusarium Ear Rot[, and suited to the Southcentral region of the United States].

29. (Twice Amended)

The hybrid maize plant according to claim 20, wherein the genetic material of said plant [contains] further comprises one or more genes transferred by backcrossing.

32. (Twice Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 29, wherein said maize plant has derived at least 50% of its alleles from 33T17 and is capable of expressing a combination of at least two 33T17 traits [which are not significantly different from 33T17 when determined at a 5% significance level and when grown in the same environmental conditions, said traits] selected from the group consisting of: a relative maturity of approximately 113 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, yielding ability, food grade quality, white food grade, test

weight, Gray Leaf Spot tolerance, and tolerance to Fusarium Ear Rot[, and suited to the Southcentral region of the United States].

Please add new claims 33 – 42 as follows:

33. (New)

A method of making a hybrid maize plant designated 33T17 comprising:
crossing an inbred maize plant GE515488, deposited as PTA-1304 with a second inbred maize plant GE534625, deposited as PTA-4289; and
developing from the cross a hybrid maize plant representative seed of which having been deposited under ATCC Accession Number PTA-4274.

34. (New)

A method of making an inbred maize plant comprising:
obtaining the plant of claim 2 and
applying double haploid methods to obtain a plant that is homozygous at essentially every locus, said plant having received all of its alleles from maize hybrid plant 33T17.

35. (New)

A method for producing an 33T17 progeny maize plant comprising:
(a) growing the plant of claim 2, and obtaining self or sib pollinated seed therefrom;
and
(b) producing successive filial generations to obtain a 33T17 progeny maize plant.

36. (New)

A maize plant produced by the method of claim 35, said maize plant having received all of its alleles from hybrid maize plant 33T17.

37. (New)

A method for producing a population of 33T17 progeny maize plants comprising:

- (a) obtaining a first generation progeny maize seed produced by crossing the maize plant of claim 2 with a second maize plant;
- (b) growing said first generation progeny maize seed to produce F_1 generation maize plants and obtaining self-pollinated seed from said F_1 generation maize plants; and
- (c) repeating the steps of growing and harvesting successive filial generations to obtain a population of 33T17 progeny maize plants.

38. (New)

The population of 33T17 progeny maize plants produced by the method of claim 37, said population, on average, deriving at least 50% of its alleles from 33T17.

39. (New)

A 33T17 maize plant selected from the population of 33T17 progeny maize plants produced by the method of claim 37, said maize plant deriving at least 50% of its alleles from 33T17.

40. (New)

The method of claim 37, further comprising applying double haploid methods to said F_1 generation maize plant or to a successive filial generation thereof.

41. (New)

A method of producing a male sterile maize plant comprising transforming the maize plant of claim 2 with a genetic factor conferring male sterility.

42. (New)

The method of claim 41 wherein a male sterile maize plant is produced.